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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/960,345 | 09/24/2001 | Yukihiro Kusano | Q65935 | 4619 |

7590 11/04/2005

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EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/960,345 | KUSANO ET AL. | |
| | Examiner | Art Unit | |
| | Norca L. Torres-Velazquez | 1771 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 October 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 6-9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 03, 2005 has been entered. The Declaration under Rule 132 of Mr. Yoshikawa filed 6/29/05 has been entered.

2. Applicant's amendment and arguments filed October 03, 2005 have been fully considered but they are not persuasive.

a. Applicants have canceled claims 1-5 and amended claim 6 directed to a tire in independent form. New claims 7-9 were included. Applicants argue that the invention recited in claim 6 that is directed to a tire is not rendered obvious over the cited references of Yoshikawa et al. and JP '010. Applicants argue that the Yoshiwara et al. reference fails to provide any examples of any tires comprising its rubbery composite material.

It is noted herein that the YOSHIWARA et al. reference discusses the importance of the improvements in adherence of rubbery composite materials onto a composite body of their invention have and recognizes the use of such composites in the production of tire. It is the Examiner's position that such disclosure is sufficient to recognize that the Yoshiwara et al. and the JP'010 are from the same field of endeavor.

b. Applicants further argue that the JP '010 reference teaches away from increasing adhesiveness by other methods different from dip and heat set treatments and would thus not motivate one skilled in the art to look to Yoshikawa's method for preparing rubbery composite materials by integrating a metal such as cobalt, and an alloy thereof into a rubber composition since the JP'010 reference discloses that the adhesiveness between

the filament fibers of the non-woven fabric and rubber can be improved by conducting dip and heat set treatments.

It is noted herein that the JP'010 reference uses a conjugation of a non-vulcanized rubber composition for fiber, teaches using solvents and also methods that involve providing a tackiness (adhesive) to the nonwoven fabric. The reference teaches that when adhesion is inadequate, it is sufficient to perform dipping heat-setting processing to a filament fiber like the case where the adhesive power of the fiber cord for tires and rubber is heightened [0022]-[0023] of the translated document. Therefore, it is the Examiner's interpretation that such disclosure teaches the use of adhesive bonding.

The Yoshikawa et al. reference discloses that methods that involve adhesive bonding pose problems including coating consideration such as adherent pretreatment and adhesive maintenance, problems with the use of solvents, among others. (Col. 1, lines 54 through Col. 2, lines 1-54) Yoshikawa et al. teaches that there is a need for an adhesive-free bonding technique in the industrial fields of tire manufacturers and the like. It is the Examiner's position that the use of the composite material taught by YOSHIKAWA et al. would be recognized in the structure of the JP'010 reference by providing improved adherence of the composite without the need of adhesive material or solvents.

c. With regards to the Declaration under Rule 132 of Mr. Yoshikawa, it is noted herein that the Declaration compares a radial tire with a nonwoven treated by conventional dip treatment such as that of the JP '010 reference with a tire of the present invention in which the nonwoven is treated by the method taught by the '932 reference. The Declaration has been considered by the Examiner, however, it is noted that the '932

reference applied in the present Office Action as a secondary reference provides motivation to use PVD or CVD methods over conventional treatments. It is the Examiner's position that using the method taught by the '932 reference would have been obvious and the improvements presented by Applicant's Declaration would have been inherent to a tire made from the combination taught by JP'010 and the '932 reference.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being obvious over JP 10-053010 in view of YOSHIKAWA et al. (US 4,872,932).

The JP 10-053010 reference teaches the use of unwoven fabric (non-woven fabric) in a rubber-filament complex of a fiber reinforced member layer in a pneumatic radial tire. (Abstract) Figure 1 shows a tire structure that includes a fiber reinforcement member layer 8a, 8b between the carcass layer 2 and sidewall rubber 7a, 7b. [0024] The JP'010 reference uses a conjugation of a non-vulcanized rubber composition for fiber, teaches using solvents and also methods that involve providing a tackiness (adhesive) to the nonwoven fabric. The reference teaches that when adhesion is inadequate, it is sufficient to perform dipping heat-setting processing to a filament fiber like the case where the adhesive power of the fiber cord for tires and rubber is heightened [0022]-[0023]

The JP'010 fails to teach that rubber is adhered to the nonwoven of the reinforcement layer by coating the nonwoven with a metal or metallic compound by PVD or CVD.

YOSHIKAWA et al. discloses a method for preparing rubbery composite materials and teaches that a metal such as zinc, copper, cobalt, and an alloy thereof can be integrated into a rubber composition to form a rubbery composite material exhibiting a firm bond between the components by press bonding the metal at a temperature which approximate to the temperature at which the rubber composition is usually heated for vulcanization; that these material can be readily deposited on a substrate as a thin film by a dry plating process such as vacuum deposition, ion plating, DC and RF magnetron sputtering, bipolar sputtering and RF sputtering processes; and that a rubber composition can firmly bond to the resulting metal thin film. (See Column 3 lines 34-45) The Yoshikawa et al. reference discloses that methods that involve adhesive bonding pose problems including coating consideration such as adherent pretreatment and adhesive maintenance, problems with the use of solvents, among others. (Col. 1, lines 54 through Col. 2, lines 1-54) The reference further teaches that the substrates that can be used in the practice of their invention are not particularly limited with respect to their material type, shape, and size, and that these may be properly selected depending on the intended application. (See Column 5, lines 18-41) Further, the reference teaches that the rubbery composite materials of their invention will find wide applications in steel tires, conveyor belts, and hoses, among others. (Column 4, lines 62-64)

Since both references are directed to materials used in the tire industry, the purpose disclosed by '932 would have been recognized in the pertinent art of JP'010.

Art Unit: 1771

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the reinforcement layer and substitute it with the composite material of '932 in which the nonwoven is treated by PVD to adhere the rubber coating motivated by the desire of improving the adherence of the composite without the need of adhesive material or solvents as taught by the '932 (above).

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dwenger et al. US 5,637,164

Herbelleau et al. US 5,660,656

Brown et al. US 6,673,184 B1

TERATANI et al. US 2003/0015272 A1

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-5:00 pm and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Norca L. Torres-Velazquez
Primary Examiner
Art Unit 1771

October 28, 2005